

SECTION III—REMARKS

This response is submitted in reply to the Office Action mailed January 30, 2007. Claims 14, 15, 18, 21-25 are amended and claims 16, 17 and 20 are canceled without prejudice. Claims 14-15, 18-19 and 21-25 remain pending in the application. Applicants respectfully request reconsideration of the application and allowance of all pending claims in view of the following remarks.

Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 14-15 and 19 as anticipated under 35 U.S.C. § 102(e) by U.S. Patent No. 6,396,711 to Degani *et al.* (“*Degani*”). Applicants respectfully traverse the Examiner’s rejections. A claim is anticipated only if each and every element, as set forth in the claim, is found in a single prior-art reference. MPEP § 2131; *Verdegaal Bros. v. Union Oil of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). For at least the reasons explained below, *Degani* cannot anticipate these claims because it does not disclose every element and limitation recited therein.

Claim 14, as amended, recites a process of forming a micro electromechanical (MEMS) package comprising:

*coupling a first MEMS device to an active surface
of a semiconductor device using a first contact array;*

*providing a conveyance including a second MEMS
device disposed therein and including a via extending
through the entire thickness of the conveyance; and*

*supporting the conveyance over the active surface
using a plurality of electrical contacts in a second contact
array, wherein the second MEMS device communicates
electrically to the semiconductor device via at least one of*

the contacts in the second contact array *and wherein the first MEMS device is positioned within the via.*

(italics added). In Figure 2, *Degani* teaches a silicon substrate 32 with a single MEMS device 31 mounted on a silicon substrate 32 (*see* col. 3, lines 34-35) and contained within a chamber 40 formed by silicon substrate 32 and silicon wafers 34, 35 and 36. The Examiner characterizes silicon substrate 32 and wafers 34, 35 and 36 as a conveyance. Applicants respectfully disagree. Even if this characterization were correct, which Applicants do not concede, *Degani* does not disclose that the alleged conveyance includes a second MEMS device disposed therein and a via extending through the entire thickness of the conveyance, including a first MEMS device positioned within the via, as recited in claim 14. Instead, Figure 2 of *Degani* teaches a single MEMS device 31, not positioned within a via but enclosed in a silicon chamber 40 (col. 3, lines 55-56 and Fig. 2). *Degani* therefore cannot disclose, teach or suggest a process combination including “coupling a first MEMS device to an active surface of a semiconductor device using a first contact array; providing a conveyance including a second MEMS device disposed therein and including a via extending through the entire thickness of the conveyance.....wherein the first MEMS device is positioned within the via.” Applicants submit that claim 14 is therefore allowable, and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 15 and 19, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See generally* MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 14 is in condition for allowance. Applicants submit that claims 15 and 19 are therefore allowable by virtue of their

dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 16-18, 20-22 and 23-25 under 35 U.S.C § 103(a) as obvious in view of, and therefore unpatentable over, different combinations of *Degani*, U.S. Patent No. 5,919,548 to Barron ("*Barron*") and U.S. Patent No. 6,452,238 to Orcutt *et al.* ("*Orcutt*"). In particular, the Examiner rejected claims 16-18 and 20 as unpatentable over *Degani* in view of *Barron*, rejected claims 21-22 as unpatentable over *Degani*, *Barron* and in further view of *Orcutt* and rejected claims 23-25 as unpatentable over *Degani* in view of *Orcutt*.

Regarding dependent claims 16, 17 and 20, Applicants respectfully submit that the Examiner's rejections are rendered moot by the cancellation of the claims. Despite cancellation of these claims, Applicants note that in rejecting claim 16 the Examiner alleged that *Degani* discloses every element and limitation of claim 16 except for a conveyance comprising a via disposed therein and a process further comprising providing at least one detached MEMS device in a first structure and accommodating the at least one detached MEMS device through the via, upon the active surface. The Examiner cited *Barron* to cure the above deficiencies of *Degani* and in doing so characterized semiconductor substrate 10 of *Barron* as a conveyance. Applicants respectfully disagree. Even if the substrate 10 of *Barron* could be characterized as a conveyance, which Applicants do not concede, *Barron* would still not disclose the limitations recited claim 16 because cavity 12 is a trench in a substrate 10, not a via extending through a conveyance. Furthermore, even if cavity 12 were a via, which Applicants do not

concede, the alleged via would not extend through the entire thickness of the alleged conveyance 10. Thus, the combination of *Degani* and *Barron* would not have obviated claim 16.

Regarding dependent claims 18 and 21-22, Applicants respectfully traverse the Examiner's rejections. If an independent claim is non-obvious under 35 U.S.C. § 103 then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 14 is in condition for allowance. Applicants submit that claims 18 and 21-22 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of the claims.

As to claims 23-25, Applicants also respectfully traverse the Examiner's rejection. To establish a *prima facie* case of obviousness, the Examiner must establish that three criteria are met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As explained below, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness.

Claim 23, as amended, recites a process comprising:

*coupling a first MEMS device to an active surface
of a semiconductor device using a first contact array;
providing a conveyance including a second MEMS
device disposed therein and including a via extending
through the entire thickness of the conveyance; and*

supporting the conveyance over the active surface using a plurality of electrical contacts in a second contact array, wherein the second MEMS device communicates electrically to the semiconductor device via at least one of the contacts in the second contact array, *wherein the first MEMS device is positioned within the via*; and

contacting encapsulation material with at least one of the semiconductor device, the first MEMS device, and the conveyance to form an integrated MEMS package.

(italics added). The Examiner alleges that *Degani* discloses every element and limitation of the claim except for contacting an encapsulation material with at least one of the semiconductor device, the detached MEMS device and the conveyance to form an integrated MEMS package. To make up for these deficiencies in *Degani*, the Examiner cites *Orcutt* and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine *Degani* with *Orcutt* to arrive at the claimed invention.

Applicants respectfully disagree. As discussed above for independent claim 14, *Degani* does not teach a combination including “providing a conveyance including a second MEMS device disposed therein and including a via extending through the entire thickness of the conveyance.....wherein the first MEMS device is positioned within the via.” The Examiner cites *Orcutt* only for its alleged disclosure of using an encapsulation material. *Orcutt* thus does not make up for the deficiencies of *Degani*, and therefore the combination of *Orcutt* with *Degani* cannot obviate the claim. Applicants therefore respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 24 and 25, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 23 is in condition for allowance. Applicants submit that claims 24 and 25 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of the claims.

Conclusion

Given the above remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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Date: 4-30-07

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